

The University of Chicago

**JOSEPH GLANVILL, WITCHCRAFT,
AND SEVENTEENTH-CENTURY
SCIENCE**

**A PART OF A DISSERTATION SUBMITTED
TO THE GRADUATE FACULTY IN CANDIDACY
FOR THE DEGREE OF DOCTOR OF PHILOSOPHY**

DEPARTMENT OF ENGLISH LANGUAGE AND LITERATURE

**By
MOODY E. PRIOR**

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CHICAGO, ILLINOIS**

**Reprinted from
MODERN PHILOLOGY
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IN 1666 there was published in London a small treatise entitled *A Philosophical Endeavour towards the Defence of the Being of Witches and Apparitions*, written, as the title-page announced, "By a Member of the Royal Society," and signed with the initials "J. G." This work—now best known as *Sadducismus triumphatus*, the title of the final enlarged edition¹—was to become the most popular book of a writer who had already gained some attention and who was to continue to produce works covering a wide range of alert intellectual interests. A modern reader perusing these will find it difficult to reconcile readily the treatise on witchcraft with Glanvill's other writings. It will seem not a little astonishing at first that the author of a clever treatise on skepticism and certainty, of several vigorous defenses of the Royal Society and of the principles of the "new science," of sermons based on the best rationalistic and latitudinarian principles—in short, that one who ranged himself in most respects in the advance guard of the thought of his day should at the same time also have written this spirited defense of a decaying superstition. The apparent anomaly has not passed unnoticed; the *Sadducismus triumphatus* is rarely referred to without some expressed or implied astonishment that it should contrast so completely with its author's other writings, particularly those that were inspired by his interest in the scientific thought of his time. It has been variously viewed as a contradiction of the rest of his work, as an example of

¹ This edition appeared posthumously in 1681, the year of Glanvill's death. The following is a list of the editions by short titles: *A Philosophical Endeavour towards the Defence of the Being of Witches and Apparitions* (1666); *Some Philosophical Considerations Touching the Being of Witches and Witchcraft* (1667); *A Blow at Modern Sadducism* (1668); *A Blow at Modern Sadducism* . . . (4th ed., 1668; a different printing from the preceding); *Sadducismus triumphatus* (in some editions spelled *Sadducismus*) (1681, 1689, 1700, 1726). The reprint in Glanvill's *Essays on Several Important Subjects in Philosophy and Religion* (1676) is called "Against Modern Sadducism in the Matter of Witches and Apparitions." An entry in the British Museum catalogue, *Palpable Evidence of Spirits and Witchcraft* (1668), is not to be considered a separate edition; it is taken from an additional title-page which appears in both of the editions of 1668. References in this article will be made to the 1726 edition except in a few special instances. Unless otherwise indicated, it may be assumed that all passages quoted or referred to are to be found in all the editions published in Glanvill's lifetime.

human weakness, as a "monument of superstition."² Yet for Glanvill no such contradiction existed; everywhere he suggests his conviction that this work fitted in quite harmoniously with his others.³

I

The most obvious, and the commonest, explanation of this paradox is that many intelligent men of the seventeenth century believed in witches, and that if, from our point of view, Glanvill erred, he was in the best of company in his own day. Glanvill, as a matter of fact, took the security of his position for granted, considering it one of the prodigies of his age that "Men, otherwise witty and ingenious, are fallen into the Conceit, that there is no such Thing as a *Witch*, or *Apparition*,"⁴ and expressing surprise and irritation in a letter to Robert Boyle that John Webster's book attacking the belief should have been licensed by a vice-president of the Royal Society.⁵ Such views may in part represent a kind of defensive self-confidence, but there is no doubt that Glanvill seriously believed most of the intelligent world to be on his side. In this he was not mistaken. In spite of an increasing amount of opposition—reflected, for instance, in the new edition of Reginald Scot's *Discovery of Witchcraft* (1651; 1st ed., 1584), in the publication of Webster's *The Displaying of Supposed Witchcraft* (1667) and Wagstaffe's *The Question of Witchcraft Debated* (1669), in the polished incredulity of Francis Osborne, and in the vigorous attacks of Hobbes⁶—most of the important thinkers of the seventeenth century who have left us any record of their opinions on this question expressed a belief—albeit at times with reluctance and

² This last phrase is Bury's in *The Idea of Progress* (London, 1924), p. 93. See also J. Tulloch, *Rational Theology and Christian Philosophy in England in the Seventeenth Century* (Edinburgh and London, 1872), II, 449–50; C. de Rémusat, *Histoire de la philosophie en Angleterre depuis Bacon jusqu'à Locke* (Paris, 1878), II, 194–95; Preserved Smith, *A History of Modern Culture*, I (New York, 1930), 457–58.

³ Cf. *Essays* (1676), Sg. [a3]f; Essay IV, pp. 5–6, 9.

⁴ *Sadducismus triumphatus* (1726), pp. 1–2.

⁵ Letter to Boyle (Bath, October 7 [1677]), in Boyle, *Works* (London, 1772), VI, 631. There is, of course, no record of any "official" attitude on the part of the Royal Society on this point, since the society excluded from its consideration all questions lying outside the province of physical experimentation and observation. The minutes of a similar organization, however, the Philosophical Society of Oxford, for March 23, 1685/6, and November 8, 1687, indicate that serious consideration of witches and similar phenomena was not thought illegitimate even among groups organized for scientific research. These minutes are printed in R. T. Gunther's *Early Science in Oxford*, IV (1925) 175–76, 208.

⁶ For a convenient description of this movement see W. Notestein, *A History of Witchcraft in England from 1558 to 1718* (Washington, 1911), pp. 245–49, 294–302. On the increasing skepticism toward witches see also Preserved Smith, *A History of Modern Culture*, I, 450–58.

hesitation—in the existence of witches and in the reality of the satanic compact.

Sir Francis Bacon,⁷ Sir Thomas Browne,⁸ Henry More,⁹ and Robert Boyle are very appropriate illustrations of this fact, since they were all men who attained intellectual distinction in their day and who, in varying degrees, might be termed “scientific” in their interests. Boyle’s views are especially illuminating, as well because he was the greatest English scientist before Newton as because he corresponded with Glanvill on the question of witches. The most direct expression of his belief appears in a letter by him prefixed to Peter du Moulin’s *The Devil of Mascon*, an account of a witch disturbance translated from the French of Perreaud, in which, after reminding the reader of his habitual caution—“the powerful inclinations, which my course of life and studies hath given me to diffidence and backwardness of assent”—he states his conviction of the truth of the narrative.¹⁰ His *Excellency of Theology* (1674), moreover, allows for the philosophical possibility of witchcraft in its criticisms of those who consider matter and motion and the inhabitants of this globe as the sole manifestation of God’s power: Boyle distinguishes three other groups besides those purely corporeal—men, good angels, and demons or evil angels.¹¹ Further evidence of Boyle’s interest in the subject of witchcraft is to be found in his correspondence, particularly in his communications to Glanvill, in which he repudiates the rumor that he has disowned the Devil of Mascon story, and offers his friend advice on the revision of his work on witchcraft for a new edition.¹²

Information of this sort enlarges one’s perspective and shows that

⁷ Bacon’s statements may have been affected by a desire to flatter James I (see *Advancement of Learning*, in *Works*, ed. Spedding, Ellis, and Heath [London, 1887], III, 331, 490). He also cautions against the possibility of confusing spirit phenomena and the delusions of the imagination (*Sylva sylvarum*, in *Works*, II, 641–42, 656). Nevertheless, his acceptance of witchcraft is more than implicit in his writings.

⁸ “For my part, I have ever believed, and do now know, that there are Witches” (*Religio medici*, in *Works*, ed. Keynes [London, 1928–31], I, 38). For an account of Browne’s part as a witness in a witch trial, see W. P. Dunn, *Sir Thomas Browne* (Menasha, 1926), pp. 23–31. Cf. also Dorothy Tyler in *Anglia*, LIV (1930), 179–95.

⁹ More’s views are discussed in some detail below.

¹⁰ This letter is reprinted in Boyle’s *Works* (London, 1772), I, ccxxi–ccxxii.

¹¹ *Ibid.*, IV, 19.

¹² Letters to Glanvill (September 28, 1677), in *Works*, VI, 58; (February 10, 1677/8), *ibid.*, p. 59. See also a letter from Glanvill to Boyle (n.d.), *ibid.*, p. 632; and the following letters: from Samuel Collins on witchcraft in Russia (September 1, 1663), *ibid.*, p. 640; from J. Beale on the possible effects of witchcraft in the making of butter (April 28, 1666), *ibid.*, pp. 400–401; from the same on the rôle of “etherial intelligents” in prophetic dreams (October 12, 1670), *ibid.*, p. 429.

Glanvill was not an isolated example of what appears an incongruity to modern taste; but to rest the case here is worse than offering no explanation at all, for these facts raise, rather than put to rest, perplexing questions. Glanvill's work can not represent simply a survival of old, ingrained beliefs still lurking uncritically in the thought of a cultivated person, the only condition which the general acceptance of witchcraft might satisfactorily explain. It represents, not passive acceptance, but on the contrary militant defense of a belief which an increasing number of men were beginning to condemn as a wicked superstition—and this in the face of the fact that Glanvill advertised on the very title-page of his treatise his membership in a group that prided itself on its intellectual independence and its complete freedom from superstition and traditional belief. Powerful and serious motives must have urged Glanvill to write so earnestly on this issue; and a suggestion of what these were may be found in the writings of those of his contemporaries who denied the possibility of witches.

II

Significantly enough, the only English thinker of first-rate importance during the seventeenth century who unmistakably and emphatically opposed the belief in witches was Thomas Hobbes. With his characteristic penchant for paradoxical argument, he approved of the punishment of "witches," but only because he considered them guilty of perpetuating an erroneous and mischievous belief.¹³ Such superstitions he believed to have originated in ignorance of natural causes and to have been preserved by crafty men for the purpose of keeping simple men in their power.¹⁴ The sources of these errors he traced to the demonology of the Greeks, the philosophy of Aristotle, and the false opinion of the Jews concerning possession by spirits, into which they fell through "want of curiosity of natural causes."¹⁵ Scriptural references to witches he dismissed, in-

¹³ *Leviathan*, in *Works*, ed. Molesworth (London, 1839-45), III, 9.

¹⁴ *Ibid.*, pp. 10, 637-38. The Hobbesian arguments left an unmistakable mark on other attacks on witchcraft. On the point under discussion, for instance, see John Wagstaffe, *The Question of Witchcraft Debated* (1669), pp. 68-77. Many of the arguments in John Webster's *The Displaying of Supposed Witchcraft* (1677), the most important reply to Glanvill, are based on Hobbesian assumptions: for example, that man can have no actual knowledge of immaterial and spiritual substance since sensation can be caused only by corporeal contact (p. 198); that angels and spirits, if incorporeal, can cause no motion (p. 208); that diabolical fascination is effected by material effluvia (pp. 182-83).

¹⁵ *Leviathan*, in *Works*, III, 605, 616, 674-75, 67-68, 639. Some of the same points are repeated by Wagstaffe, pp. 19-28.

terpreting them in a figurative and metaphorical sense,¹⁶ and insisting that the Bible nowhere makes unmistakable reference to incorporeal spirits or to possession,¹⁷ and that in any case accuracy is no more to be expected from the Bible on this point than on the question of the earth's motion.¹⁸

Hobbes's motive in urging the falsity of the belief in witchcraft was clearly not just a desire to overthrow a distasteful superstition. He concerned himself with this question chiefly because, in a negative way, it formed part of his general argument for the unreality of incorporeal substance and for the materiality of the "soul," both essential ideas in his attempt to interpret all aspects of the entire universe in terms of matter and mechanical laws. Glanvill, on the other hand, was inspired in his defense of the belief by an opposite desire to prove the existence of immaterial substance, as a service in the cause of religion against materialistic mechanists like Hobbes. Nor was this a question in which the scientists were unconcerned; indeed, in large part it owed its importance as a philosophic issue at the time to the metaphysical implications of certain developments in the work of the scientists themselves.

None of the scientific philosophers of the seventeenth century were unaware of the religious implications of their work, and, whenever their ideas seemed dangerous to church and faith, all of them attempted either to avoid these implications or to explain them away. Such efforts at reconciliation were particularly prominent in England because the greater number of those interested in the new science in that country were at the same time sincerely anxious to conserve the substance of traditional religious belief. Accordingly, they took frequent occasion to insist that the new scientific discoveries did not necessarily lead to atheism and irreligion, expressing this conviction with a mixture of concern and reassurance that revealed a more than casual fear of being misunderstood.¹⁹ All these protestations indicate the awareness on the part of the scientists and their adherents of the

¹⁶ *Leviathan*, in *Works*, III, 66-67, 396, 421, 433, 603-4, 642.

¹⁷ *Ibid.*, pp. 391-92, 393, 641, 644.

¹⁸ *Ibid.*, p. 68.

¹⁹ See, e.g., Bacon, *Novum organum*, in *Works*, IV, 20, 87-88; *Advancement of Learning*, in *Works*, III, 264, 267-68; Boyle, *Usefulness of Experimental Natural Philosophy*, in *Works*, II, 19, 33, 55, 57; *Excellency of Theology*, in *Works*, IV, 37; letter to Baxter (n.d.) in *Works*, VI, 520; Thomas Sprat, *History of the Royal Society* (3d ed.; London, 1722), pp. 351-54, 320; Glanvill, *Scep sis scientifica*, p. 182; *Vanity of Dogmatizing*, pp. 247-48.

new problems which their discoveries and ideas had raised in the minds of intelligent though pious men, and illustrate their desire to forestall condemnation of their scientific aims by the orthodox-minded. By Glanvill's time, the principal issues which arose out of the necessity of reconciling science and religion had been clearly defined, and the answers to the main questions which had been raised had been fully developed.

The most serious philosophical difficulties, it was clear, arose out of the exclusive concern of the "new" scientists with secondary causes; that is, with purely mechanical interpretations of all natural phenomena. The necessary result of this method of approach was a picture of the universe as a beautifully regulated automaton which, by its mechanical perfection, allowed to God a relatively insignificant rôle and left little possibility for the operation of any immaterial principle or spirit.

The scientists, however, were unwilling to relax their persistent search after purely mechanical explanations of natural phenomena, chiefly in terms of atomic assumptions. Attention to mechanical causes had developed into one of the basic methodological principles of the new philosophy of nature, and none of the leading scientists of the period failed to enunciate or imply it. In England, Boyle in particular gave elaborate and frequent expression to it in his writings. He insisted that the naturalist should avoid religious and metaphysical explanations, and that he should reduce his descriptions of all natural phenomena to terms of matter and the laws of motion.²⁰ Unfortunately for the peace of mind of the scientists, however, persons who did not have Boyle's reputation for sanctity applied this principle in so thoroughgoing a manner as to exclude the philosophic possibility of immaterial substance or spirit and to permit dangerous implications with respect to the original creation by God. Hobbes loomed up as the contemporary horrible example of this development; and although the menace of Hobbes was certainly not the only fact that determined the scientists' defense of their inquiries against the possible charge

²⁰ *Of the Excellency and Grounds of the Mechanical Hypothesis*, in *Works*, IV, 73; *Origin of Forms and Qualities*, in *Works*, III, 7. Boyle expressed annoyance at More's attempts to give metaphysical explanations for certain of his experiments in hydrostatics (cf. *An Hydrostatical Discourse Occasioned by the Objections of the Learned Dr. Henry More*, in *Works*, III, 627). Cf. also Bacon: "For certain it is that God worketh nothing in nature but by second causes" (*Advancement*, in *Works*, III, 267); Glanvill, *Scire/i tuum nihil est* (bound with *Scep sis scientifica*), p. 71.

of irreligion, particularly on the issue of the creation,²¹ the terrifying consistency of his mechanical principles stimulated such discussion and provided a focus for it.

Like the other scientific thinkers, Hobbes also excluded from the concern of philosophy "all such things as are thought to be neither bodies nor properties of bodies."²² But this became for Hobbes, not a methodological principle, but a metaphysical assumption. He described the universe as a plenum, in which no vacuum can exist,²³ and in which all motion is caused by direct mechanical contact, declaring in consequence that "there is no such thing as an incorporeal movent."²⁴ This principle determined for Hobbes two important conclusions. All thought and sense became explainable for him in terms of matter and motion: the thinking substance must be material, and thought and sensation merely the movement of physical particles.²⁵ And as a logical consequence, even God himself must be corporeal.²⁶ It is little wonder that with such a system apparently being developed out of their own principles, the more religious-minded writers interested in the advancement of natural science opposed conclusions of this nature so vigorously, and that they often deliberately pointed their arguments against Hobbes.

To offset possible confusion, they made a distinction between a mechanical approach to the study of nature that was dangerous to religion, and one that was, on the contrary, of positive assistance in the cause of faith. Glanvill himself, among others, insisted that a valuable

²¹ During the sixteenth century, preoccupation with the danger to religion of mechanical interpretations of nature was stimulated by the revival of interest in Epicurean atomism chiefly through knowledge of Lucretius. On the early diffusion of atomism see G. B. Stones, "The Atomic View of Matter in the XVth, XVIth, and XVIIth Centuries," *Isis*, X (1928), 445-65. A number of texts illustrative of the apprehension with which the mechanistic character of the atomic hypothesis was regarded are cited by George Buckley in an unpublished University of Chicago dissertation, *Rationalism in Sixteenth-Century English Literature* (1931).

²² *Elements of Philosophy*, in *Works*, I, 10; also *ibid.*, pp. x-xi, 11.

²³ *Ibid.*, pp. 414-25; *Seven Philosophical Problems*, in *Works*, VII, 17-24; *Decameron physiologicum*, in *Works*, VII, 89-95.

²⁴ *Elements of Philosophy*, in *Works*, I, 430, 124-25.

²⁵ *Ibid.*, p. 391; *Leviathan*, in *Works*, III, 11-12. See also his criticism of Descartes in *Troisièmes objections in Descartes' Œuvres*, ed. Adam et Tannery (Paris, 1897-1913), IX, 135, 138. Even the Cartesian mechanism seemed alarming to certain writers in England, although Descartes established a clear distinction between *res cogitans* and *res extensa*, thus effecting a separation of mind from body, and of God, the original creator and mover of matter, from matter itself.

²⁶ The materiality of God is explicitly stated in Hobbes's reply to Bishop Bramhall, in *Works*, IV, 313. See also *Leviathan*, in *Works*, III, 672; *Decameron physiologicum*, in *Works*, VII, 89.

feature of the work of the Royal Society was "the searching out the true laws of Matter and Motion in order to the securing of the Foundations of Religion against all attempts of Mechanical Atheism."²⁷ Atomists who were in bad odor, according to these views, were guilty of two fundamental errors: they attempted to account for the formation and development of the universe by the random motion of atoms; and, second, by concentrating only on the physical character of the universe, they encouraged a disbelief in the operation of any spiritual or immaterial principle. In reply to the first of these dangerous conclusions, the point was frequently made that no sensible and exhaustive investigator of nature could possibly entertain the belief that the creation was not the handiwork of a supreme being.²⁸ But the scientists went farther, and attempted to demonstrate that their study of the mechanical laws of matter and motion provided one of the most unanswerable proofs for the existence of an intelligent deity, the creator of the universe. They adopted the old argument from design, and, giving it a new coloring drawn from the facts revealed by contemporary science, repeated untiringly in its modern form the old theme of the Psalmist, the heavens declare the glory of God and the firmament sheweth his handiwork.²⁹

²⁷ "Address to the Royal Society," *Scepsis scientifica*, Sg. (a2). On the anti-Hobbesian aim of Glanvill's thought here see *ibid.*, Sg. (b) f, and "The Usefulness of Real Philosophy to Religion," in *Essays*, Essay IV, p. 33 (this essay is a reprint of his *Philosophia pia* 1671)).

²⁸ Boyle, *The Excellency and Grounds of the Corpuscular or Mechanical Hypothesis*, in *Works*, IV, 68-69; More, *An Antidote against Atheism*, in *A Collection of Several Philosophical Writings of Dr. Henry More* (London, 1712), pp. 135-36; letter to Glanvill in Glanvill's *A Præfatory Answer to Henry Stubbe* (London, 1671), p. 155; Glanvill, *Essays*, Essay IV, pp. 7-8, 32-33.

²⁹ It is unnecessary to document this point exhaustively here. Broadly speaking, it might be observed that the argument from design appears most prominently in those writers in whose thought atomic mechanism was an essential element. It appears only casually, for example, in Bacon (*Advancement*, in *Works*, III, 300-301; *Novum organum*, in *Works*, IV, 89). Some typical examples are as follows: Gassendi, *Syntagma philosophicum*, in *Opera* (Lyon, 1658-75), I, 311; II, 231; More, *An Antidote against Atheism*, in *A Collection* . . . , pp. 5, 37-85, 40-42; Boyle, *Usefulness of Experimental Natural Philosophy*, in *Works*, II, 20-21, 30, 43; *A Discourse of Things above Reason*, in *Works*, IV, 446; *Some Motives and Incentives to the Love of God*, in *Works*, I, 262-63; Sprat, *History*, p. 349; Glanvill, *Vanity*, pp. 42-46; *Scepsis*, pp. 32-34; *Essays*, Essay IV, pp. 5, 7; *Plus ultra*, p. 54. It must also be noted in passing that at times, and in particular in certain writers, the emphasis in the argument from design was placed not simply on the order, regularity, contrivance, and use of the parts of the universe, but on their beauty as well, attention being called occasionally even to the extravagant and surprising flourishes of nature. The most complete development of this turn of the argument is to be found in Henry More (*An Antidote*, in *A Collection*, pp. 54-55, 57; *Appendix to An Antidote*, *A Collection*, p. 212).

The argument from design derived much of its force from the orderly perfection and mathematical regularity of nature as discerned by the scientist; it therefore inclined toward a view of the universe, already too prominent, that left to God the position of aloof and useless spectator of his own creation, and that thus further encouraged by implication a theistic mechanism which could be little more acceptable than a corporeal deity or no deity at all. By means of the same general set of arguments, however, it was found possible not only to assign a more intimate rôle to God in the universe, but to reply to those who denied a place in nature to immaterial substance or spirit.

The solution of this problem was developed over a wide range of variations.³⁰ In its simplest form it posited God as essential not only to the creation of the universe but also to its continued existence. It was probably Descartes who gave this view its widest popularity in his provision for God's *concours ordinaire* as essential to the preservation of the present status of matter and motion.³¹ But the idea was also to be found in the writings of other prominent scientific philosophers, as, for example, Gassendi³² and Boyle.³³

This solution, however, failed to satisfy all possible objections; it was vague, and it still permitted the explanation of all observable phenomena in terms simply of mechanical law. It failed, in short, to give any definite place to immaterial substance. The development of mechanistic science had, of course, completely excluded the possibility of admitting the direct intervention of God in the normal operations of nature; hence, some indirect agent, some all-pervading non-material element, had to be admitted in order to avoid a simple theistic mechanism. Now, such a hypothesis was not without precedent in purely scientific thinking: in the work of an earlier genera-

³⁰ The present discussion is admittedly inadequate for a full understanding of all the issues involved. An admirable treatment of the whole development may be found in E. A. Burt's *Metaphysical Foundations of Modern Physical Science* (New York and London, 1925).

³¹ *Principes*, in *Œuvres*, IX, 83-84. See also Gilson's notes to his edition of the *Discours*, pp. 340-42.

³² *Syntagma*, in *Opera*, I, 323.

³³ Boyle uses the expression "ordinary support and influence." Cf. *Origin of Forms and Qualities*, in *Works*, III, 48-49 and *Usefulness of Experimental Natural Philosophy*, in *Works*, II, 39. For more popular expressions of this view see Sprat, *History*, p. 360, and Glanvill, *Lux orientalis*, pp. 126-27.

tion of natural philosophers, before the "mechanical" theory had become so inflexibly a part of the scientific consciousness, the assumption of a non-mechanical agent had occasionally been made in primarily scientific explanations; for example, by Gilbert in his speculations about magnetism.³⁴ Even Boyle admitted, with some hesitation, that certain phenomena cannot be readily explained by atomic principles, and that some of them suggest the possibility of a non-mechanical agency.³⁵ Yet actually Boyle was reluctant to go beyond these general admissions, and on the whole was disposed to limit the physicist strictly to a description of the course of nature in terms of atomic matter and motion.³⁶ It was Henry More who, largely in opposition to Hobbes and later to Descartes as well, developed with complete fulness the idea of the diffusion through the universe of an immaterial agent which exerts a guiding force on the phenomena even of the regular physico-mathematical world of the physicist—"the Spirit of Nature, *which is the Vicarious power of God upon the Matter. . . .*"³⁷ Too many phenomena, More insisted, defy explanation in terms of the laws of matter: the opposition of gravity to the first law of motion, the phenomena described in experiments with Boyle's air pump, the cohesion of atoms, etc., all illustrated for him the manner in which this immaterial transmitter of God's power checks or controls purely mechanical impulses and motions.³⁸

All these various developments illustrate the desire of the leading scientific philosophers not to exclude at least the possibility of an immaterial principle or substance. The eclectic Glanvill, eager to embrace the newest scientific ideas, yet equally anxious not to endanger the fundamental suppositions of faith, mirrored these tendencies in his writings. He wavered between one alternative and another at times, but he never failed to allow the possibility of an immaterial or

³⁴ On the development of the idea of a spiritual medium to account for certain natural phenomena see Burt, *Metaphysical Foundations*, pp. 157-60.

³⁵ *Usefulness of Experimental Natural Philosophy*, in *Works*, II, 35, 38-39, 47-48.

³⁶ *Origin of Forms and Qualities*, in *Works*, III, 48-49. But see *Usefulness of Experimental Natural Philosophy*, in *Works*, II, 39, 47-48, for his admission of the possibility of the pervading presence of an intelligent being throughout the universe.

³⁷ *The Immortality of the Soul*, in *A Collection*, p. xlii. For a concise definition of More's idea of the Spirit of Nature see *ibid.*, p. 212.

³⁸ *Ibid.*, pp. 212-24; *An Antidote against Atheism*, in *A Collection*, pp. 46, 190. Similar arguments were later (1678) used by Cudworth in *The True Intellectual System of the Universe* (London, 1743), pp. 47, 148.

"vital" principle in at least some of the operations of nature.³⁹ Though he never adopted all of More's views completely,⁴⁰ he admitted their plausibility and accepted the basic principles which determined them. And it was precisely his concern for these principles that inspired his labors on witchcraft.

III

The opposition to atheistical and theistic mechanism is unmistakable in the *Sadducismus triumphatus*. Glanvill, after presenting the position of those who deny witchcraft because they deny spirit, points out clearly the dangerous materialistic and mechanistic conclusions which such views encourage:

The Notion of a Spirit is impossible and contradictory, and consequently, so is that of Witches; the Belief of which is founded on that Doctrine.

To which *Objection*, I answer, First, If the *Notion* of a *Spirit* be absurd, as is pretended, that of a God and a Soul distinct from Matter, and immortal, are likewise Absurdities; and then, that the World was jumbled into this elegant and orderly Fabrick by Chance; and that our Souls are only Parts of Matter that came together, we know not whence, nor how, and shall again shortly be dissolv'd into those loose *Atoms* that compound them; that all our Conceptions are but the Thrusting of one Part of Matter against another; and the *Ideas* of our Minds meer blind and casual Motions. These, and a Thousand more, the grossest Impossibilities and Absurdities (Consequents of this Proposition, *that the Notion of a Spirit is absurd*) will be sad Certainties and Demonstrations. And with such Assertors I would cease to discourse about Witches and Apparitions, and address my self to obtain their Assent to Truths infinitely more sacred.⁴¹

He laments the fashionable disbelief in witches, since in Sadducism, or the denial of spirits, which he believes underlies the ridicule of sorcery, he sees the first step in a chain of reasoning leading to atheism;⁴² for he was opposing not simply those who disbelieved in

³⁹ In particular see "Of Scepticism and Certainty," *Essays*, Essay II, p. 60; and "Antifanatical Philosophy and Free Religion," *ibid.*, Essay VII, pp. 50-51.

⁴⁰ In particular, he felt that Descartes, unlike Hobbes, did allow for the operation of immaterial substance. Cf. *Scep sis*, pp. 64-65; *Vanity*, pp. 87-88; *Essays*, Essay IV, p. 11.

⁴¹ *Sadducismus*, pp. 4-5.

⁴² Preface to *Sadducismus*, Sg. A4^v. The passage in question appeared first in 1668. Throughout Glanvill's works there runs a lament over the scoffing, atheistical, "Sadduce" temper of the times (*ibid.*, pp. 223-24; *Some Discourses, Sermons and Remains* [1681], pp. 152, 269-70; *The Zealous and Impartial Protestant* [1681], p. 43). This attitude is common during the middle years of the seventeenth century, especially among those who defended the belief in witches. Henry More considered the demonstration of the existence of incorporeal beings "a design, than which nothing can be more seasonable in this age;

witches, but those who maintained that the "Notion of a Spirit is impossible and contradictory, and consequently, so is that of Witches; the Belief of which is founded on that Doctrine."⁴³ In other words, he realized that the same philosophical assumptions which were used to disprove the belief in witches by such materialists as Hobbes⁴⁴ could be, and in fact were being, used to deny the reality of a spirit-soul, if not of God. He believed, therefore, that by showing certain phenomena to be the work of evil spirits operating through witches he could destroy a vital link in the argument of those who denied reality to all spirit, and thus strike at the root of materialistic mechanism.

There was of course nothing new in this argument that disbelief in witches was a step toward atheism. By the beginning of the seventeenth century it had become fairly common. Pierre le Loyer in his *Discours et histoires des spectres* (1605) had denounced the materialist and atheist opponents of witchcraft, and had made a fairly thorough analysis of their position. The enemies against whom he directed his denunciation were "Sadduces," who believe God to be corporeal; Epicureans, who attribute all phenomena to atoms; and Peripatetics—not the true followers of Aristotle, but heretical disciples like Aphrodisius and Pomponazzi.⁴⁵ This linking of disbelief in witchcraft with various forms of atheism became the rule in England during the middle years of the century.⁴⁶ According to Sir Thomas Browne, "they that doubt these [witches], do not only deny them, but Spirits; and are obliquely and upon consequence a sort not of Infidels, but

wherein the notion of a spirit is so hooted at by so many for nonsense" (letter to Boyle in Boyle, *Works*, VI, 514). Thomas Bromhall maintained that he wrote his *Treatise of Specters* (1658) because it seemed called for during "these so much Saducean and Socinian times" (Sg. A2). Boyle warned Glanvill to be very careful about the authenticity of his relations, "for we live in an age and place, wherein all stories of witchcrafts, or other magical feats, are by many, even of the wise, suspected; and by too many that would pass for wits, derided and exploded" (letter to Glanvill [1677], in *Works*, VI, 57-58). The fashionable current of disbelief in witches is briefly touched on by Notestein, *A History of Witchcraft*, pp. 245-46.

⁴³ *Sadducismus*, p. 4.

⁴⁴ Glanvill mentions Hobbes directly in the Preface to the *Sadducismus*, Sg. [A5]r and p. 229. The attack on Hobbesian materialism, however, is plain enough without these direct references.

⁴⁵ *Discours et histoires des spectres* (Paris, 1605), pp. 7-31.

⁴⁶ Notestein refers to this view in Thomas Cooper's *The Mystery of Witchcraft* (1617) as if it were a fairly new element in English discussions (*A History of Witchcraft*, pp. 231-32).

Atheists."⁴⁷ Bromhall, in his *Treatise of Specters* (1658), mentions among the disbelievers of witches Sadducees, Epicureans, certain Peripatetics, "and all sorts of *Atheists* whatsoever."⁴⁸

In most of these writers the argument was not developed with the same fulness and subtlety as in Glanvill; moreover, it was not directed against so immediate and conspicuous an enemy, nor did it draw from precisely the same background. In fully elaborated form, it found expression before Glanvill's treatise in the works of Henry More, who undoubtedly exercised the most direct influence on this aspect of Glanvill's thought.

In a letter to Glanvill, dated May 25, 1678, and printed in the *Sadducismus* of 1681, More analyzed succinctly his general position:

And forasmuch as such course grain'd Philosophers as those *Hobbians* and *Spinozians*, and the rest of that Rabble, slight Religion and the Scriptures, because there is such express Mention of Spirits and Angels in them, Things that their dull Souls are so inclinable to conceit to be impossible; I look upon it as a special Piece of Providence, that there are ever and anon such fresh Examples of Apparitions and Witchcrafts, as may rub up and awaken their benumm'd and lethargick Minds, into a Suspicion at least, if not Assurance, that there are other intelligent Beings, besides those that are clad in heavy Earth or Clay; in this, I say, methinks the Divine Providence does plainly outwit the Powers of the dark Kingdom, in permitting wicked Men and Women, and vagrant spirits of that Kingdom, to make Leagues or Covenants one with another; the Confession of Witches against their own Lives, being so palpable an Evidence, besides the miraculous Feats they play, that there are bad Spirits, which will necessarily open a Door to the Belief that there are good Ones; and, lastly, that there is a God.⁴⁹

A good many years before the writing of this letter, however, More had fully developed the details of this chain of reasoning in several of his works, in which his concern with witches was clearly bound up with his desire to prove the existence of an immaterial spirit of nature. The arguments from design and from the incompleteness of mechanical explanation furnished, in his opinion, one line of proof; but to these he added witches and apparitions as constituting a more tangible kind of demonstration.⁵⁰ He gave prominence to this latter type of evidence because he believed that it furnished an empirical, and hence

⁴⁷ *Religio medici*, in *Works*, I, 38; also *Pseudodoxia epidemica*, in *Works*, II, 75-76.

⁴⁸ P. 343.

⁴⁹ "Dr. More's letter to Mr. Glanvill," in *Sadducismus*, pp. 9-10.

⁵⁰ *Immortality of the Soul*, in *A Collection*, pp. 36-37.

an undeniable, proof of the existence of spirits and incorporeal substances:

The third and last ground which I would make use of, for evincing the Existence of *Incorporeal Substances*, is such extraordinary Effects as we cannot well imagine any natural, but must needs conceive some free or spontaneous Agent to be the Cause thereof, whenas yet it is clear that they are from neither Man nor Beast. Such are speakings, knockings, opening of Doors when they were fast shut, sudden lights in the midst of a room floating in the air, and then passing and vanishing; nay, shapes of Men and several sorts of Brutes, that, after speech and converse, have suddenly disappeared. These, and many such like extraordinary Effects . . . seem to be an undeniable Argument, that there be such things as *Spirits* or *Incorporeal Substances* in the world. . . .⁵¹

More conceived God as "an Essence of which this *Matter* depends, and in which he is, penetrating and possessing all things"; and in the phenomena of witchcraft he found sufficient proof that spirit can penetrate and actuate matter.⁵² That is why he took his witch stories so seriously, and why he considered ridicule of them "a dangerous Prelude to *Atheism* it self, or else a more close and crafty profession and insinuation of it."⁵³

Such motives inspired much of the seventeenth-century defense of witchcraft,⁵⁴ and they are of particular importance in understanding Glanvill's earnest efforts on behalf of the belief.⁵⁵ Much of Glanvill's

⁵¹ *Ibid.*, p. 47.

⁵² *An Appendix to the Foregoing Antidote* [against atheism], in *A Collection*, p. 223.

⁵³ *An Antidote against Atheism*, in *A Collection*, p. 142. One view developed by More in his discussion of spirits Glanvill never wholly accepted, though he entertained it as a possibility; i.e., the conception of spirit as "extended, penetrable, indiscrptible, and self-motive." He was undoubtedly expressing his own state of mind in "Anti-fanatical Religion and Free Philosophy," his continuation of Bacon's *New Atlantis*, when he represented the clergy of Bensalem amicably divided between this view of spirit and the Cartesian, which assigned extension and motion only to matter (*Essays*, Essay VII, p. 53). Glanvill never repudiated Descartes entirely, as did More.

⁵⁴ See also Méric Casaubon, *Of Credulity and Incredulity*, pp. 7, 40-41; Benjamin Camfield, *A Theological Discourse of Angels*, Sg. A3v, pp. 171-72.

⁵⁵ Other closely associated influences did, of course, combine to encourage belief in spirits and consequently in witches, in particular the preference of such men as More and Glanvill for the Platonic rather than the Aristotelian philosophy. Glanvill frequently appeals to the Platonic theories of the soul and of spirit (*Sadducismus*, pp. 5, 8-9, 23-24). One of these arguments which Glanvill admittedly draws from a Platonistic background—i.e., that judging from the analogy of nature "all the upper stories of the Universe are furnished with Inhabitants" (*ibid.*, pp. 5, 23-25)—seems to have had some currency: Browne wonders "how so many learned heads should so far forget their Metaphysicks, and destroy the ladder and scale of creatures, as to question the existence of Spirits" (*Works*, I, 88); and Boyle seems to argue from similar premises when he insists that there must be other classes of creatures besides those purely corporeal (*The Excellency of Theology*, in

treatise, it is true, represents a survival of older discussions of the problem: a good portion of his argument is theological; in the later editions there is considerable quibbling over Webster's *The Displaying of Supposed Witchcraft* (1677), which was apparently a reply to Glanvill, on the question of the much-discussed Witch of Endor; many of his stories were taken over from earlier collections such as those of Jean Bodin; and all the conventional features of the witch dogma he accepted with little question.⁵⁶ Glanvill, however, was neither without judgment in what he adopted nor unaware of earlier criticisms of the belief. In fact, one of the disarming features of his book in its later form was his complete acceptance of all that had been objected against the possibility of witchcraft.⁵⁷ His defense took account of what had already been said on the subject and attempted to put the problem on a philosophical basis. And for the "philosophic" features of the *Sadducismus triumphatus*, Glanvill drew largely, with perhaps only a new emphasis, on arguments and assumptions characteristic of those of his works which had nothing to do with occult tradition and which had grown out of his interest in the new science. The unique quality of his book did not lie so much in his use of any basically new materials or proofs as in the new attitude which guided his manipulation of the traditional speculations about spirits and witches. What he did was to impose a scientific pattern on to the usual form of defense. He was attracted to the problem of witches largely because of his interest in certain metaphysical questions made

Works, IV, 19). Glanvill further insists that the philosophy of the schools leads to Sadducism (*Essays*, Essay VII, p. 53). This view was not unfounded: rationalistic Aristotelians like Pomponazzi and Cardan in general disbelieved in spirits, whereas Platonists were usually believers (cf. Henri Busson, *Les Sources et le développement du rationalisme dans la littérature française, 1533-1601* [Paris, 1922], pp. 45, 238, and n. 4). Ferris Greeneslet in his *Joseph Glanvill: A Study in English Thought and Letters of the Seventeenth Century* (New York, 1900), pp. 150-51, and John Owen in the introduction to his edition of the *Scepsis scientifica* (London, 1885), pp. xl ff., refer to Glanvill's early Puritan training as a partial explanation of his belief in witches. No recent student of witchcraft will take this connection very seriously. G. L. Kittredge, in his *Witchcraft in Old and New England* (Cambridge, Mass., 1929), demonstrates at some length (pp. 329-73) that there is no necessary or unique relationship between Puritanism and the belief in witchcraft.

⁵⁶ Since these traditional features of witch dogma stand outside of our main problem, and have been discussed adequately in other studies, they will not be fully dealt with here. For Glanvill's definition of witchcraft see the introduction to Part II of *Sadducismus*, pp. 225-26. This passage did not appear before 1681.

⁵⁷ Introduction to Part II of *Sadducismus*, pp. 227-29. This passage appeared first in 1681.

peculiarly important by developments in science, and he self-consciously brought to bear on his discussions the approved axioms of scientific methodology.

IV

The usual proof on which seventeenth-century natural philosophers relied for the existence of spirit was of a negative and indirect character: by indicating the inadequacy of explanations of physical phenomena which considered only matter and the laws of motion, certain scientists allowed room for inference concerning the possible part played by immaterial substance. Glanvill saw no reason, however, why scientists could not with great profit conduct direct investigations into the operations of spirit itself. Here was an unexplored field, and here a group of men, the members of the Royal Society, trained in the only methods by which it was possible to unravel the mysteries of any phenomenon. With this in mind he went so far as to propose a scientific study of this unknown world by the Society:

Indeed, as things are for the present, the LAND of SPIRITS is a kinde of AMERICA, and not well discover'd Region; yea, it stands in the Map of humane Science like unknown Tracts, fill'd up with Mountains, Seas, and Monsters: For we meet with little in the Immaterial Hæmisphere, but Doubts, Uncertainties, and Fables; and whether we owe our ignorance in these matters, to the nature of the things themselves, or to the mistakes and sloth of those that have enquired about them, I leave to your Lordship's happy sagacity to determine. Only, perhaps more of the supra-mundane light had shone in upon us, but for Superstition, Despair, and the wranglings of the Schools. And did the SOCIETY of which your Lordship is an illustrious Member, direct some of its wary, and luciferous enquiries towards the World of Spirits, I believe we should have other kind of Metaphysicks, than those are taught by men that love to write great Volumes, and to be subtil about nothing. For we know not any thing of the world we live in, but by experiment and the Phenomena; and there is the same way of speculating immaterial nature, by extraordinary Events and Apparitions, which possibly might be improved to notices not contemptible, were there a Cautious, and Faithful History made of those certain and uncommon appearances. At least it would be a standing evidence against SADDUCISM, to which the present Age is so unhappily disposed, and a sensible Argument of our Immortality.⁶⁸

The implication is that, although spirits probably do not follow the laws of matter, there is no reason to suppose that they do not follow

⁶⁸ *A Blow at Modern Sadducism* (1668), pp. 115-17. This passage does not appear in any of the other editions.

laws peculiar to themselves, which careful "histories"—that is, observed data critically collected and classified—and experiments might reveal.⁵⁹ In his own estimation, Glanvill was a scientist when he compiled the material for his work on witchcraft. Nor was he without precedent in this: Henry More believed that in his witch relations he was meeting the mechanistic atheist on his own grounds, as a naturalist: "But that he might not be shie of me, I have conform'd my self as near his own *Garb* as I might, without partaking of his Folly or Wickedness; and have appear'd in the plain shape of a mere *Naturalist* my self. . . ."⁶⁰

No doubt it was a contradiction to consider the investigation of the spirit-world a legitimate possibility for the natural philosopher since science had definitely limited its field to a study of mechanical causes only, and the Royal Society had carefully excluded the topics of God and the soul from its province; yet various leaders of the scientific movement saw some justification for such inquiries. Bacon had asserted that, with regard to evil spirits, "the contemplation or science of their nature, their power, their illusions, either by Scripture or reason, is a part of spiritual wisdom," and that "it is no more unlawful to inquire the nature of evil spirits that to enquire the force of poisons in nature, or the nature of sins and vice in morality."⁶¹ The study of witchcraft and marvels, in his opinion, could be of considerable use to the naturalist because it would help him distinguish between different types of phenomena and hence would be useful "for the further disclosing of nature."⁶² Boyle communicated to Glanvill his belief that knowledge of the phenomena which the latter was studying might help to enlarge the philosophical horizon, restricted perhaps too much by the limitations within which the physicist usually worked:

. . . I might add, that some of the particulars you mentioned to me, as (especially) those of the insensible marks of witches, and the way of detecting them, may suggest odd speculations to a naturalist, and help to enlarge the somewhat too narrow conceptions men are wont to have of the amplitude

⁵⁹ Glanvill states his belief that spirits are "dispos'd of by a law proper to themselves" in *Lux orientalis* (1662), pp. 128–29. See also Benjamin Camfield, *A Theological Discourse of Angels* (1678), p. 202.

⁶⁰ Preface to *An Antidote against Atheism*, in *A Collection*, p. 7.

⁶¹ *Advancement*, in *Works*, III, 351.

⁶² *Ibid.*, p. 331. A similar suggestion appears in Sprat's *History*, p. 214.

and variety of the works of God; since, if it appear, that there are intelligent agents that are able to increase; whereas men can but determine the motions of the parts of matter, the discovery of it may advantageously enlarge our knowledge, though not, perhaps, in physics, strictly so called, yet in philosophy. . . .⁶³

In spite of their "official" dictum that their concern was only with mechanical causes and with the phenomena of matter and motion, most of the scientific philosophers were reluctant to restrict the field of their interest and study too closely, since they also felt that anything whatever which provided them with material for observation and investigation was not unworthy of their attention. Moreover, however guardedly they tried to concentrate on matter, they found themselves unable, as we have seen, to avoid the subject of spiritual and immaterial forces. This being the case, such ambitions as those of More and Glanvill to make a careful "history" of spiritual phenomena were not scorned as chimerical extravagances but rather encouraged in some quarters as sober efforts to enlarge the philosophical horizon.

Glanvill was not content, however, to account for the amazing facts of witchcraft merely by asserting that spirits act in an extraordinary manner peculiar to themselves which careful scientific investigation might in time discover. Confronted with a growing incredulity about the various popularly accepted conventions of witch dogma, he attempted to give these a degree of probability by showing that they might be explained in terms of theories proposed to account for the operation of the more obscure and mysterious phenomena observed by the naturalist—though he warned the reader of the inaccuracy of measuring "the World of *Spirits* by the narrow Rules of our own *impotent Beings*."⁶⁴ His purpose was to checkmate those who disbelieved because of the impossibility and incomprehensibility of the reputed behavior of witches. Is it really impossible, he asked, to conceive how witches fly out of windows, raise tempests, or transform themselves into cats, or why they are sucked in certain parts of their bodies by their familiars? For himself, he was satisfied that "there is nothing in the *Instances* mention'd, but what may as well be ac-

⁶³ Letter to Glanvill (September 18, 1677), in *Works*, VI, 58-59.

⁶⁴ *Sadducismus*, p. 7.

counted for by the Rules of *Reason* and *Philosophy*, as the ordinary Affairs of *Nature*.”⁶⁵ It is hardly necessary to describe all the scientific folly which this opinion leads Glanvill to indulge in. He places emphasis, now on the effects of the imagination, now on the physiological effects of the ointment used by witches, now on the possibility of poisonous ferments being infused into the witch during certain of the rites. A characteristic example of his reasoning is his explanation of the evil eye:

. . . . I am apt to think, there may be a *Power* of real *Fascination*, in the *Witch's Eyes* and *Imagination*; by which, for the most Part, she acts upon *tender Bodies*. . . . For the *pestilential Spirits*, being darted by a *spightful* and *vigorous Imagination* from the Eye, and meeting with those that are weak and passive in the Bodies which they enter, will not fail to infect them with a noxious Quality, that makes dangerous and strange Alterations in the Person invaded by this poisonous Influence; which Way of acting, by subtile and invisible Instruments, is ordinary and familiar in all natural *Efficiencies*. And 'tis now past Question, that *Nature*, for the most Part, acts by *subtile Streams* and *Apphoræa's* of *minute Particles*, which pass from one Body to another.⁶⁶

Underlying this explanation, and most of the others, though often only by implication, is the theory that obscure and remote operations of nature are performed by streams of minute and invisible particles, or “effluvia,” transmitting their force through a distance. This hypothesis had been applied to such various problems as the nature of magnetism, sympathetic healing, the cures of the famous Greatrak who healed by stroking, and the like. These were not speculations indulged in merely by the popular mind. The old belief that wounds might be healed by anointing the weapon with salve, seriously referred to by Bacon,⁶⁷ was described also by Boyle,⁶⁸ who further discussed the nature of cures by magnetism, the physiological effects of wearing precious stones, etc. And he usually accounted for such phenomena

⁶⁵ *Ibid.*, p. 8.

⁶⁶ *Ibid.*, p. 14. Pp. 9–18 are largely devoted to explanations of this order. More had attempted the same thing less elaborately in his *Antidote against Atheism* (in *A Collection*, pp. 122–23).

⁶⁷ *Sylva sylvarum*, in *Works*, II, 670–71.

⁶⁸ *Usefulness of Experimental Natural Philosophy*, in *Works*, II, 164–65. A book by Nathaniel Highmore, *The History of Generation* (1651), which contained an appendix on sympathetic healing, was dedicated to Boyle. This method of healing wounds was usually connected with the name of Sir Kenelm Digby. For a brief sketch of the history of sympathetic healing see H. S. Redgrove, *Bygone Beliefs* (London, 1920), pp. 47–56.

as the workings of "subtle effluvia."⁶⁹ Such theories were essentially physical in character, but, concerned as they were with effects that had all the appearance of the marvelous, they were easily applicable to the mysterious doings of witches which Glanvill tried to render probable for the purpose of forestalling the incredulous.

It was of course illogical of Glanvill to employ physical theories in his explanation of spiritual phenomena, particularly as this should have weakened the force of his witch stories as proof for the reality of immaterial agents.⁷⁰ More illustrious men than he, however, made errors just as egregious. Scientists of undoubted distinction had played with the idea of giving probability to essentially mysterious and extra-natural effects by applying to them physical and mechanical principles. None of Glanvill's attempts to restore faith in the witch dogma by interpreting it in terms of physical theories is any more extravagant, for example, than those of Descartes to find a plausible explanation of transubstantiation.⁷¹ It must not be overlooked, too, that Boyle wrote an entire treatise, *Some Physico-theological Considerations about the Possibility of the Resurrection* (1675), the purpose of which was to suggest how chemical transformations give us some intimation of the possibility of the resurrection. Such instances illustrate the interest among even the most distinguished scientists of the day in a kind of illegitimate speculation, usually in the interest of religion, which disregarded the limits they had carefully imposed upon themselves, and attempted to apply to non-material problems the methods and hypotheses used in physical research.

Glanvill was thus quite in harmony with a strain of theorizing countenanced even by certain major figures in seventeenth-century science, both in his belief that the unexplored world of spirits was a legitimate and fruitful field for study and in his efforts to demonstrate the probability of witchcraft by means of well-recognized physical theories. Contradictory though these efforts seem to have been, they were both, in Glanvill's mind, appropriate to his rôle as scientific in-

⁶⁹ *Usefulness of Experimental Natural Philosophy*, in *Works*, II, 167-68. See also *Cosmical Suspensions* (1670), in *Works*, III, 317-18, and his letter to Stubbe (March 9, 1665/6), *Works*, I, lxxxiii-lxxxiv. Boyle has something to say as well on cures for diseases probably caused by witchcraft (*Usefulness of Experimental Natural Philosophy*, in *Works*, II, 159).

⁷⁰ The logical contradiction was not as great or as naïve as it sounds for the moment. See below, pp. 188-89.

⁷¹ Letter to P. Mesland (February 9, 1645), in *Œuvres*, IV, 162-70.

vestigator in immaterial forces. Moreover, throughout all his discussions, Glanvill was conscious of maintaining the attitude and employing the methodological principles which in his other writings he was extolling as the distinguishing characteristics of the "new philosophy."

V

In 1668 Glanvill included for the first time as part of his treatise the story of the Demon of Tedworth, a notorious witch disturbance which he had personally investigated. He later revised and added to this account so that the posthumous edition of 1681 contains an elaborate collection of such stories, made up of contemporary accounts, recent trials, and narratives from older treatises on witchcraft. This feature of his book he took seriously, protesting that he was not interested in these stories as entertainment but as serious proof. For such minds as were either indifferent to any evidence that did not come in through the senses or too common to be impressed by subtle philosophic reasoning, he included these empirical proofs for the existence of spirit, his "history" of witch behavior:

. . . they are *both* best convinced by the Proofs that come nearest the *Sense*, which indeed strike our Minds *fullest*, and leave the most *lasting* Impressions; whereas high Speculations, being more *thin* and *subtile*, easily *slide off*, even from Understandings that are most capable to receive them. For this Reason, among some others, I appear thus much concerned, for the Justification of the Belief of *Witches*, it suggesting *palpable* and current Evidence of our *Immortality*. . . .⁷²

These relations, Glanvill felt, should satisfy the objections of those who insisted that we can have no conception of immaterial substance since we can know only those things which we have experienced through our senses;⁷³ for in his witch stories he believed he had provided, on the basis of the soundest kind of empirical method, evidence of phenomena that could not be brought about by the ordinary processes of matter.⁷⁴

⁷² Epistle dedicatory to *Sadducismus*, Sg. A2v; also Preface, *ibid.*, Sg. [A5]. These passages appeared first in 1668.

⁷³ E.g., Hobbes, *Human Nature*, in *Works*, IV, 61; *Leviathan*, in *Works*, III, 27; Webster, *The Displaying of Supposed Witchcraft*, pp. 198, 202-3.

⁷⁴ Leslie Stephen, in his article on Glanvill in the *DNB*, recognizes this element in the *Sadducismus*: "His defense of witchcraft was the natural result of an attempt to find an empirical ground for the supernatural . . ." (XXI, 408). Limited to the portion of the *Sadducismus* dealing with witch stories alone, this statement is approximately correct; but it cannot be considered an adequate interpretation of the entire treatise, especially as it can apply only to a section of the book added after several editions had already appeared.

It was generally admitted, to be sure, that many witch stories were plain frauds; but to Glanvill's mind this fact did not necessarily discredit such testimony altogether.⁷⁵ Moreover, Boyle himself, although he warned Glanvill that the unreliability of most narratives should make him cautious of the selection and verification of those which he did publish, encouraged the use of well-established relations on the theory that, as in science, one authentic account is sufficient to establish a truth in opposition to a host of false ones.⁷⁶ Few names during the seventeenth century could have been better guaranty for the validity of any method of procedure or for the acceptability of any assertion of fact. It was with considerable flourish that Henry More had referred to the belief of "that excellently-learned and noble Gentleman Mr. R. Boyle" in the Devil of Mascon story in order to silence objections to his own use of relations and in order that "nothing may be wanting to convince the incredulous."⁷⁷ As a matter of fact, the evidence on which these witch relations rested was in many cases no less secure than that on which a large number of the items in such "histories of nature" as Bacon's *Sylva sylvarum* were based. Meric Casaubon was on safe ground when he urged in defense of his own collection of witch stories that the history of nature would suffer if absence of first-hand observation and occasional imposture were made the basis of total disbelief.⁷⁸ The confidence, therefore, with which Glanvill employed his narratives was not founded on a naïve credulity peculiar to himself. He thought of his collection of stories as a "*Cautious, and Faithful History* made of those *certain and uncommon* appearances" which he had urged as a possible project for the Royal Society. And he had the sanction of no less a person than Boyle to convince him of the correctness of his procedure.

Glanvill was equally conscious of adapting another principle of scientific method to his problem in his attempts to render the phenomena of witchcraft credible by explaining them in terms of recognized physical theories: this was the doctrine of hypotheses. He frankly admitted that he made no claims for these explanations as

⁷⁵ *Sadducismus*, pp. 19-20.

⁷⁶ *Works*, VI, 58, 59.

⁷⁷ *An Antidote against Atheism*, in *A Collection*, p. 95. More's defense of his use of stories is similar to that of Glanvill and Boyle (see *ibid.*, pp. 87, 88, 126, 162-63).

⁷⁸ *Of Credulity and Incredulity*, pp. 8-9.

final and certain, insisting on their probability only, in imitation of the naturalist's procedure in assigning causes to physical phenomena:

... in resolving *natural Phænomena*, we can only assign the probable *Causes*, shewing how Things *may be*, not presuming how they are. And in the Particulars under our *Examen*, we may give an Account how 'tis *possible*, and not unlikely, that such Things (though somewhat varying from the common *Road of Nature*) may be acted. And if our narrow and contracted Minds can furnish us with Apprehensions of the Way and Manner of such Performances, though, perhaps, not the true ones, 'tis an Argument that such Things may be effected by Creatures, whose Powers and Knowledge are so vastly exceeding ours.⁷⁹

The mere establishment of probable explanations undermined, in Glanvill's estimation, the objection that such actions as were ascribed to witches were inconceivable; it would, moreover, also afford a basis for further serious consideration of the problem, and would thus lead in the future to a more exact knowledge.⁸⁰ He saw no difference, that is, between the method used by the scientists in assigning causes and explanations in their study of natural phenomena and that which he was applying in his interpretation of witch behavior. The scientist formulated his explanations as hypotheses because he knew that he must expect no more from the present state of knowledge than probability, and because he wished to supply suggestions for further and more accurate study.⁸¹ Like him, and for approximately the same reasons, Glanvill was establishing a hypothesis of witch behavior, and he referred to his explanations directly as such.⁸²

But the most extraordinary weapon which his scientific background afforded him against extreme skeptics who denied positively the existence of spirits was "scientific skepticism" itself, the attitude which he had developed, principally in his *Vanity of Dogmatizing* and *Sceptis scientifica*, with a mixture of ancient pyrrhonistic and modern argument. Those who discounted the doings of witches because they could not conceive how such things could be he classed with the rustics who do not think that the things performed "by the *Mathematicks*

⁷⁹ *Sadducismus*, p. 8.

⁸⁰ Preface to *Sadducismus*, Sg. [A5]. This passage did not appear before 1668.

⁸¹ For formulations of this doctrine see Bacon, *Advancement*, in *Works*, III, 351-52; *Plan of the Work*, in *Works*, IV, 31-32; Boyle, *Certain Physiological Essays*, in *Works*, I, 303; *Sceptical Chymist*, in *Works*, I, 460-61; Sprat, *History*, pp. 38-39; Glanvill, *Plus ultra*, p. 87.

⁸² *Sadducismus*, p. 11.

and *Mechanick Artifice*" can be "effected by the honest Ways of *Art* and *Nature*."⁸³ He condemned as an unreasonable method of inference "first to presume the thing *impossible*, and thence to conclude that the *Fact* cannot be *proved*."⁸⁴ In reality, he pointed out with a reference to his earlier writings, we are no more familiar with the why of many obvious performances of nature than with the remarkable feats of witches:

And we can no more, from hence [the impossibility of witch performances], form an Argument against them, than against the most *ordinary Effects in Nature*. We cannot conceive how the *Fœtus* is form'd in the *Womb*, nor as much as how a *Plant* springs from the *Earth* we tread on; we know not how our *Souls move* the *Body*, nor how these distant and extreme *Natures* are *united*; as I have abundantly shewn in my *SCEPSIS SCIENTIFICA*. And if we are ignorant of the most *obvious* Things about us, and the most *considerable within* ourselves, 'tis no wonder that we know not the *Constitution* and *Powers* of the *Creatures*, to whom we are such Strangers.⁸⁵

It was therefore not perverseness, but scientific caution born of skepticism, that prompted Glanvill's reply to many of the objections raised against the things he was describing: ". . . the *Laws, Liberties, and Restraints* of the *Inhabitants* of the other *World*, are to us utterly *unknown*; and this Way we can only argue ourselves into *Confessions* of our *Ignorance*, which every Man must acknowledge, that is not as *immodest* as *ignorant*."⁸⁶

Such views may seem improperly described as skepticism, but the skepticism of Glanvill was not the simple pyrrhonism of antiquity, nor yet wholly like the elaborated form of that philosophy in such of its sixteenth- and seventeenth-century disciples as Montaigne, Charon, Agrippa, or La Mothe le Vayer. Its peculiar character is to be understood in the light of the part which pyrrhonism played in the development of scientific methodology. To realize the importance of this philosophy in the thought of the scientists, one need only consider the direct way in which the pyrrhonic axioms are incorporated

⁸³ *Ibid.*, p. 7.

⁸⁴ *Ibid.*, p. 20.

⁸⁵ *Ibid.*, p. 7. See *ibid.*, p. 230, for a similar passage (added in the edition of 1681), with a reference again to the *Scep sis*.

⁸⁶ *Ibid.*, p. 15; also pp. 17-18, 20-21. Somewhat the same use of this type of argument was made by More in connection with witchcraft in *An Antidote against Atheism*, in *A Collection*, pp. 14-15, 189-90. See also Camfield, *A Theological Discourse of Angels*, p. 203.

in the "Idols" of Bacon, the extensive exposition given them by Descartes in the first two *Meditations*, and the systematic manner in which they are set forth in Gassendi's *Syntagma philosophicum*.⁸⁷ The elaborated pyrrhonism of the seventeenth century represented the most complete extant critique of human knowledge, and philosophers, therefore, whose aim was to develop methods which would overcome the disadvantages of former students and place human learning on a new and solid footing could hardly avoid taking it into account. Having admitted the validity of many of the skeptical positions, the scientists, however, endeavored to provide new methods that would overcome the difficulties proposed, and thus declined to accept skepticism as an end in itself, or its ultimate conclusion that final knowledge was impossible.⁸⁸ But they did retain skepticism as an essential element in good method, as an attitude of mind necessary in any investigation destined to lead to truth and certainty. As Bacon put it, "if a man will begin with certainties, he shall end in doubts; but if he will be content to begin with doubts, he shall end in certainties."⁸⁹ In an equally simple form the principle is embodied in the title of one of Glanvill's early works: *Scepsis scientifica: or Confest Ignorance the Way to Science; in an Essay of the Vanity of Dogmatizing*. This was the type of skepticism that lay back of the constant insistence by the scientists on open-minded investigation, the attitude which Glanvill described as "free philosophy."⁹⁰ The only fundamental similarity between this skepticism and pyrrhonism was the systematic opposition to dogmatizing—and the scientists opposed not only the dogmatism of credulity and tradition but also the dogmatism of unbelief.

The former emphasis predominated, since the scientists were compelled to combat age-old learning and academic inertia, but the latter was also called into service. It was the attitude, for example, which animated William Harvey's reply to those "who repudiate the circula-

⁸⁷ *Opera*, I, 73 ff.

⁸⁸ Bacon states the case succinctly in describing himself as "one who maintains not simply that nothing can be known, but only that nothing can be known except in a certain course and way" (*Plan of the Work*, in *Works*, IV, 32).

⁸⁹ *Advancement*, in *Works*, III, 293. See also Descartes, *Discours*, ed. Gilson, pp. 28-29; Boyle, preface to the appendix of the *Sceptical Chymist*, in *Works*, I, 591.

⁹⁰ "Of Scepticism and Certainty," in *Essays*, Essay II, p. 44; *Scire/i tuum nihil est*, in *Scepsis*, pp. 3, 5-6, 12 (separate pagination).

tion because they neither see the efficient nor final cause of it, and who exclaim, *cui bono?*"—"how many things we admit in physiology, pathology, and therapeutics, the causes of which are unknown to us?"⁹¹ And he concludes a series of answers to objections with a fuller statement of the same argument, that we must not deny simply because we do not understand:

I would ask of those who profess a knowledge of the causes of all things, why the two eyes keep constantly moving together, up or down, to this side or that, and not independently, one looking this way, another that; why the two auricles of the heart contract simultaneously, and the like? Are fevers, pestilence, and the wonderful properties of various medicines to be denied because their causes are unknown? Who can tell us why the foetus in utero, breathing no air up to the tenth month of its existence, is yet not suffocated?⁹²

It was the same principle, moreover, which Boyle made use of in arguing for the possibility of such things as vacuum and spirit:

And as for the way of arguing, so often employed (especially against the truth we now contend for) and so much relied on by many modern philosophers, namely, that they cannot clearly conceive such or such a thing proposed, and therefore think it fit to be rejected; I shall readily agree with them, in the not being forward to assent to any thing, especially in philosophy, that cannot well be conceived by knowing and considering men. But there is so much difference among men, as to their faculty of framing distinct notions of things, and through men's partiality or laziness, many a particular person is so much more apt, than these men seem to be aware of, to think, or at least to pretend, that he cannot conceive, what he has no mind to assent to, that a man had need be wary, how he rejects opinions, that are impugned only by this way of ratiocination.⁹³

Glanvill adopted this argument, giving it perhaps a more skeptical coloring. It was, however, a skepticism which took the form, not of the classical *epoché*—the suspension of belief—but of the tentative suspension of disbelief that was for Glanvill a necessary element of the scientific attitude. Hence the paradox that Glanvill believed in witches because he was a skeptic. Nor is this to be wondered at; for

⁹¹ *An Anatomical Disquisition on the Motion of the Heart and Blood in Animals* ("Everyman's Library"), p. 148.

⁹² *Ibid.*, p. 161.

⁹³ *Usefulness of Experimental Natural Philosophy*, in *Works*, II, 46–47; also *Works*, IV, 450; VI, 694. The same argument was developed quite fully by "T. E." in *Some Considerations about the Reconcilableness of Reason and Religion* (1675). He argued that although such conceptions as matter and time are difficult to comprehend, they are not therefore to be considered unreasonable, and that anyone unfamiliar with magnetic phenomena would consider them contrary to reason (in Boyle, *Works*, IV, 173–74, 178).

seventeenth-century scientists—impressed by the difficulty of discovering causes for natural phenomena; willing, as a result of the striking reversals of old views by new discoveries and the restoration of older theories that had once been discarded, to entertain any hypothesis until they were convinced that it was untenable; and ambitious enough to consider all obscure, trivial, or extraordinary events worthy of their serious attention—allowed their opposition to dogmatism to lead them to an extreme of scientific skepticism that at times verged closely on credulity. And it was particularly tempting and easy to call in the aid of this systematic opposition to dogmatism in the interest of an assumption for which they had such tender concern as the reality of spirit.

To consider Glanvill's work on witchcraft as a complete contradiction of all his scientific scruples is, therefore, to commit the common error of thinking of science in the seventeenth century only in terms of what has survived in modern textbooks of physics. In reality the movement was a complex of attitudes, intentions, and beliefs, not all of which were strictly compatible. To understand the character of the "new science" it is necessary to consider not only Kepler's well-known three laws but the mathematical follies which incumber his works, not only Boyle's experiments but his *Excellency of Theology*. The science which formed the background of the Royal Society was a fusion of intricate elements, and Glanvill mirrored it in all its complexity in his works. Of this movement, his work on witchcraft is almost as legitimate an offspring as his *Scepsis scientifica*, his *Plus ultra*, or his *Philosophia pia*. It was precisely because he was one of the new scientists that he interested himself in the problem, and that he felt sure enough of the arguments and methods of his book to justify his confident title, *Sadducismus triumphatus*.

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